



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due
PO039372	MEC002-VU	1	1	Net 30	M7050-T7451-P4.50X6.25X10.50	7050 Aluminum Plate, 4.5" Thick x 6.25" Wide x 10.50" Long MATERIAL: 7050-T7451 SIZE: 4.50" X 6.25" X 10.50" LONG GRAIN DIRECTION ALONG: 10.50" LENGTH				10	4/12/2018	10	S061608	Stock	4/17/2018	\$ 136.00 Ea	0		
						Total:	10			10									

Plex 4/17/2018 9:15 AM Dart.Dubois.Pascal



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO039372

Supplier: MEC002-VU
Metaux Castle
P.O. Box 4090 Stn A
Toronto
ON
M5W OE9 Canada

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO039372
PO Date: 3/21/18
Due Date: 4/12/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Phone:

Via: Ground
Pymt Terms: Net 30
Freight Terms: Prepaid
Special Comments:

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M7050-T7451-P4.50X6.25X10.50		7050 Aluminum Plate, 4.5" Thick x 6.25" Wide x 10.50" Long MATERIAL: 7050-T4 SIZE: 4.50" X 6.25" X 10.50" LONG GRAIN DIRECTION ALONG: 10.50" LENGTH	Firmed	4/12/18	10 Ea	0 Ea	10 Ea	\$136.00/Ea	\$1,360.00

APR 17 2018

DAS
11
9-89

Grand Total: \$1,360.00

Order Notes

Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents
- A048 counterfeit parts avoidance, detection, mitigation and disposition program
- A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 3/21/18 12:12 PM dart.hemmerich.steven

INTERORG TRANSFER
PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3558968

Ship From:	Sold To:	Ship To:	Deliver To:				
A. M. CASTLE & CO. 14001 ORANGE AVENUE PARAMOUNT, CA 90723 USA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON L5N 2K7 CAN	A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA				
Date Shipped	F.O.B.	Freight Terms	Carrier	BOL No			
05-APR-18	ORIGIN	Prepaid	YRC	3558968-2			
Shipment Details	Final Destination Branch - TOR						
Order No	Line No	Item No	Description	Invoice Qty			
5086215	1	752686.MO	4.5000.PL.7050.T7451.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN (+ .1250/- .0000 IN (USE ONE HEAT ONLY) X 10.5 IN (+ .1250/- .0000 IN (GRAIN TO RUN ALONG 10.5")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS 4050	10.00 PCS			
Purchase Order No	Part Number	Ordered Qty	Invoice Qty	10.00 PCS			
39372				10.00 PCS			
Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS						
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
121731897	KAISER ALUMINUM		1				30.8177
121731897	KAISER ALUMINUM		9				277.3595

INTERORG TRANSFER
PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date: 1-26-18

Name: A. M. Castle & Co.



SHIP TO:
 A M CASTLE & CO
 14001 ORANGE AVE
 P.O. BOX 1402
 PARAMOUNT, CA 90723

SOLD TO:
 AM CASTLE & CO- SOLD TO
 1420 KENSINGTON RD
 SUITE 220
 OAK BROOK, IL 60523

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
 Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
 4474103

CUSTOMER PO NUMBER:	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP RUN/LOAD:	GOVT CONTRACT NUMBER:
432040-1		752686	104011/17	
KAISER ORDER NO:	SHIP DATE:	ALLOY:	CLAD:	TEMPER:
1241256-1	15-AUG-2017	7050	BARE	T7451
WEIGHT SHIPPED:	QUANTITY:	TRUCK BL #:	GAUGE:	DIAMETER/WIDTH:
6478 LB	2 PCS EST.	2068463	4.5000 IN (114.3000 MM)	48.500 IN (1231.9 MM)
				LENGTH:
				144.500 IN (3670.3 MM)

MHU 2139302: LOT 230453B3: 1 pieces;
 MUH 2139303: LOT 230453B3: 1 pieces;

Certified Specifications

AMS 4050/RevJ
 BAC 5439/RevJ
 CMMP 025/RevV
 DPS 4.713/RevAK
 MMS 1420/RevG

AMS-STD-2154/RevC	ASTM B 594/Rev13
BAMS 516-003/RevB	BSS 7055/RevB
CSTI 006/RevE	DMS 2233/RevG
GAMPS 9101/RevB/AmdSCN1	GSS16100/RevG/Amd1
PS 21211/RevP	

Test Code: 4170

Test Results





Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4474103

Lot: 230453B3 Cast 101 Drop 60 Ingot 5 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7451	LT / 2 (Min:Max)	74.1 : 75.6 (511 : 521)	65.6 : 66.6 (452 : 459)	9.5 : 9.6
	T7451	L / 2 (Min:Max)	73.9 : 74.6 (510 : 514)	66.4 : 67.1 (458 : 463)	13.2 : 13.4
	T7451	ST / 2 (Min:Max)	72.9 : 72.9 (503 : 503)	61.8 : 63.0 (426 : 434)	7.2 : 8.0

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.7 Min	41.2 Max
(MS/M) :	23.6 Min	23.9 Max

Stress Corrosion Factor(SCF): 25.9

(ASTM E399)

Fracture Toughness :

KIC(L-T)	36.6 ksi_sqrt_in
	40.3 MPa_sqrt_m
KIC(S-L)	26.9 ksi_sqrt_in
	29.6 MPa_sqrt_m
KIC(T-L)	26.1 ksi_sqrt_in
	28.7 MPa_sqrt_m

(ASTM E1251)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.04	0.08	2.2	0.01	2.0	0.01	6.2	0.03	0.01	0.11	TOT 0.05

ALLOY LIMITS

	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7050												
MIN(wt%)	0.00	0.00	2.0	0.00	1.9	0.00	5.7	0.00	0.00	0.08	EACH	0.05
MAX(wt%)	0.12	0.15	2.6	0.10	2.6	0.04	6.7	0.06	0.05	0.15	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15240B R 5



Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4474103

TEST NOTES

Material produced and certified to AMS4050, Rev. J, meets applicable requirements of AMS4050, Rev. H

7050-T7451 plate 3.001-8.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-Kaisert-1.

IF REQUIRED, FRACTURE TOUGHNESS TESTING WAS PERFORMED BY KAISER ALUMINUM OR WESTMORELAND MECHANICAL TESTING & RESEARCH, INC. IN YOUNGSTOWN, PA. ALL TESTING WAS IN ACCORDANCE WITH THE APPLICABLE MATERIAL AND TESTING SPECIFICATIONS. ALL VALUES MEET THE MATERIAL SPECIFICATION REQUIREMENTS. ANY Kg VALUES ARE USABLE FOR LOT RELEASE PER ASTM B645, UNLESS OTHERWISE NOTED. DETAILED TESTING RESULTS ARE ON FILE AT KAISER ALUMINUM.

ALSO IF REQUIRED, PLATE UNDER 1.5" THICK REQUIRING ST TENSILE TESTING WAS TESTED AT WESTMORELAND MECHANICAL TESTING & RESEARCH, INC..

Metal represented by this test report was 100% Type I (immersion) ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

CERTIFICATION

Kaiser Aluminum, Trentwood Works, is ISO 9001, AS9100, and ISO 14001 certified, and hereby certifies that all material shipped under this order:

- has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein.
- All test equipment and measuring devices are calibrated and certified in accordance with applicable specifications. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. Reported elongation values have been measured as elongation at fracture.
- was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
- has been thermally processed in compliance with AMS 2772, where applicable.
- is mercury free, within the limits of detection of ASTM E1215 (<1ppm).
- is in compliance with RoHS 2, European Union Directive 2011/65/EU.
- is in compliance with European Chemical Agency, ECHA, REACH regulations, (IEC) No : 907/2006, and Kaiser regularly monitors these regulations for updates.
- is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.
- is free of weld repair.
- meets the reporting requirements of EN10204, Type 3.1.

Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M7050-T7451-P4.50x6.00x10.00 PO / BATCH NO.: 039372/061608
 DATE: APR 17 2018

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 10 Pcs
 QUANTITY INSPECTED: 10 Pcs
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.50
 THICKNESS RECEIVED: 4.50
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	<i>AMS 4050 CT 7451</i>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	<i>Heat # 230453B3</i>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y <input type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>8-89 APR 17 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

8
7
6
5
4
3
2
1

D

C

B

PURCHASE MATERIAL: 7050-T7451 ALUMINUM PLATE OR
7050-T7651 ALUMINUM PLATE

SPECIFICATION:
PER AMS 4050 (T7451)
OR AMS 4201 (T7651)

PART NUMBER:
M7050-[HHHHH]-PTTTX[W.WW]X[LLL]
[TEMPER][THK][WIDTH][LENGTH]

WHERE "HHHHH" = TEMPER (T7451 OR T7651)
"TTT" = THICKNESS (IN INCHES)

"W.WW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

NOTE: GRAIN DIRECTION MUST BE IN LENGTH DIRECTION

EG. 10.50 LONG BY 6.25" WIDE BY 4.50" THICK PLATE IN T7451 = M7050-T7451-P4.50X6.25X10.50
EG. 11.00 WIDE BY 5.75" THICK PLATE IN T7651 = M7050-T7651-P5.75X11.00
EG. 3.50" THICK PLATE IN T7451 = M7050-T7451-P3.50

RELEASED
2018 MAR 21
EN18-66/*q*

APPROVED

A	NEW ISSUE	NO	17.12.22
REV.	DESCRIPTION	BY	DATE
DESIGN DRAWN	AJS	NO	
CHECKED	AJS	NO	
MFG. APPR.	RA	NO	
APPROVED	OP	TITLE	
DE APPR.	OP	7050 PLATE SPEC	
DATE	17.12.22	Copyright © 2017 by DART AEROSPACE LTD. No part of this document may be reproduced without written permission from Dart Aerospace Ltd.	